

REMARKS

Claims 1, 3-15, 17-19 are now pending in the application. Claims 1-19 stand rejected. Claims 2 and 16 have been cancelled herein; and Claims 1, 11 and 17 have been amended. Bases for the Amendments can be found throughout the application, drawings and claims as originally filed and, as such, no new matter has been presented. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1, 6, 8, and 10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Schreiber et al. (U.S. Pat. No. 3,382,137; hereinafter "Schreiber"). This rejection is respectfully traversed.

At the outset, Applicants note that Schreiber appears to disclose merely forming a laminate structure composed of a first layer of a thin glass sheet 10, a second layer of resin 11 and a third layer of a second glass sheet 10. The laminate is formed by placing two rubber gaskets 22 between the glass sheets 20, which are held together by clamps 23 as the resin flows into an area defined between the sheets. The resin 11 is heated to cure, and once the resin 11 cures it applies compressive force to the rear surface of the first glass sheet and the front surface of the second glass sheet. The rear surface of the second glass sheet is in tension. Schreiber does not teach or disclose whatsoever maintaining the entire glass laminate in a state of compression. In contrast, independent Claim 1 has been amended to recite:

securing a reinforcing structure to the rigid interlayer;
and

securing a support member to the reinforcing structure to support the mirror.

In view of the above discussion, Applicants respectfully submit Schreiber does not disclose each and every element as claimed in Applicants' Claim 1. In particular, Schreiber does not teach or disclose securing a reinforcing structure to the rigid interlayer or securing a support member to the reinforcing structure as now claimed. Rather, Schreiber discloses forming a laminate glass structure for use as safety glass for windows. It would be improper to modify Schreiber to include the attachment of a reinforcing structure and a support member to the rear surface of the resin as there is no suggestion to make such a modification, and such a modification would impermissibly modify the intended purpose of Schreiber's disclosure.

Accordingly, as Schreiber does not teach or disclose whatsoever securing a reinforcing structure to the rigid interlayer or securing a support member to the reinforcing structure as claimed, Applicants respectfully submit independent Claim 1 is patentable and in condition for allowance.

With regard to Claims 6, 8 and 10, Applicants note that these claims depend directly or indirectly from independent Claim 1, and should be patentable and in condition for allowance for at least these reasons. In addition, Applicants note that Claim 6 has independently allowable subject matter as Schreiber does not teach or suggest whatsoever forming the glass member into a predetermined shape. Furthermore, Schreiber actually teaches away from forming the glass member into a shape as Schreiber discloses forming the laminate glass member with C-clamps, which are incapable of imparting a shape onto the glass member. Furthermore, Schreiber teaches flowing the resin 11 between the area defined by the glass sheets, and

Applicants note that additional modifications would have to be made to the disclosure of Schreiber to enable the resin to flow into a shape. As such modifications are not contemplated whatsoever by the Schreiber reference, Applicants respectfully submit that not only does Schreiber not teach the forming of the glass member into a predetermined shape, there is no motivation to modify Schreiber to include such a teaching. Therefore, Applicants respectfully request the Examiner reconsider and withdraw the rejections to Claims 1, 6, 8, and 10 under 35 U.S.C. § 102(b).

Claims 1-2, 6, 8, 10-14 and 16-17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Shimodaira et al. (U.S. Pat. No. 4,807,969; hereinafter "Shimodaira"). These rejections are respectfully traversed.

Applicants note Shimodaira appears to disclose a reflector formed by placing a thin glass plate 7 and a prepreg 3 into a forming mold 1 and applying heat and pressure to bond the glass plate 7 to the FRP 4. The curing of the resin in the prepreg 3 transfers the shape of the forming mold 1 to the FRP 4 (see at least Column 1, lines 25-28). Then, a reflecting film 2 is deposited onto the surface of the glass plate. The forming mold 1, as shown, places the rear surface of the glass plate 7 in a state of tension. The curing of the resin merely serves to ensure the glass plate 7 maintains the curved shape of the forming mold 1, and there is no teaching or suggestion whatsoever of the resin being capable to overcome the state of tension in the rear surface to place the rear surface in a state of compression. Shimodaira also does not disclose whatsoever coupling a reinforcing structure to the rigid interlayer or securing a support

member to the reinforcing structure to support the glass member. In contrast, independent Claim 1 has been amended to recite:

- providing a glass member with a front surface and a rear surface;
- securing a rigid interlayer to the rear surface of the glass member such that the rigid interlayer applies a compressive force to the rear surface of the glass member;
- securing a reinforcing structure to the rigid interlayer;
- and
- securing a support member to the reinforcing structure to support the mirror.

Claim 11 recites:

- applying a resin to the rear surface of the mirror;
- curing the resin said resin shrinking as it cures and
- applying a compressive force to the rear surface;
- providing a reinforcing structure; and
- securing the reinforcing structure to the rear surface of the mirror, the reinforcing structure supporting the mirror.

In view of the above discussion, Applicants respectfully submit Shimodaira does not teach each and every element of Applicants' independent Claims 1 and 11. In this regard, Shimodaira does not teach or suggest a rigid interlayer secured to the rear surface of the glass member to apply a compressive force to the rear surface of the glass member, securing a reinforcing structure to the rigid interlayer, securing a support member to the reinforcing structure to support the glass member, or a resin that shrinks as it cures to apply a compressive force to a rear surface of a mirror. Rather, Shimodaira teaches a resin that shrinks as it cures to hold the shape of the forming mold 1, and does not teach or suggest whatsoever a resin that imparts a force to place the rear surface of the glass member in a state of compression. Applicants note

anticipation, however, may reside even if the prior art reference relied on does not expressly disclose a minor aspect of the claimed invention. Under the principles of inherency, if a structure in the prior art necessarily functions in accordance with the limitations of a process or method claim of an application, the claim is anticipated. *In re King*, 801 F.2d 1324, 231 USPQ 136, 138 (Fed. Cir. 1986). The Federal Circuit has stated:

To serve as an anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence. Such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference and that it would be so recognized by persons of ordinary skill. *Continental Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 20 USPQ 2d 1746, 1749 (Fed. Cir. 1991).

In this regard, the CCPA has added that “[i]nherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient.” *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (C.C.P.A. 1981) (quoting *Hansgirk v. Kemmer*, 102 F.2d 212, 214, 40 USPQ 665, 667 (C.C.P.A. 1939) (emphasis in original)).

Applicants submit that the Shimodaira reference is silent about the asserted inherent characteristic of providing a compressive force to the rear surface of the glass member as it cures to overcome the state of tension in the rear surface of the glass member, and, moreover, that the Office has not presented any extrinsic evidence that would make clear that the missing descriptive matter is necessarily present in the Shimodaira reference, and that it would be so recognized by persons of ordinary skill in the art.

Additionally, Applicants note that Shimodaira does not teach or disclose whatsoever securing a reinforcing structure to the rigid interlayer or securing a support member to the reinforcing structure to support the glass member. Rather, Shimodaira teaches securing a honeycomb structure 5 and an additional FRP 4a to the FRP 4 to create a reflector. The reflector is not secured whatsoever to a support member that supports the glass member as claimed.

Accordingly, in view of the above discussion, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of Claims 1 and 11 under 35 U.S.C. § 102(b). In addition, as Claims 6, 8, 10, 12-14 and 17 depend directly or indirectly from independent Claim 1 or 11, Applicant submits these claims are patentable and in condition for allowance for the reasons discussed above with regard to Claims 1 and 11. With regard to Claims 2 and 16, as these claims have been cancelled, the rejection to these claims has been rendered moot. Thus, Applicants respectfully request the Examiner reconsider and withdraw the rejections of Claims 6, 8, 10, 12-14, and 17 under 35 U.S.C. § 102(b).

REJECTION UNDER 35 U.S.C. § 103

Claims 2-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Schreiber as applied to Claim 1. This rejection is respectfully traversed.

Applicants respectfully refer the Examiner to the remarks above regarding the Schreiber reference as discussed with regard to Claim 1 and Claim 6. Applicants note that Claims 3-9 depend directly or indirectly from independent Claim 1, Applicant submits these claims are patentable and in condition for allowance for the reasons

discussed above with regard to Claim 1. In addition, with regard to Claim 6, Applicants note that Schreiber teaches away from forming a curved shape as the method of forming employed by Schreiber requires the use of C-clamps, and Applicants respectfully assert there is no suggestion in Schreiber to modify this forming method to produce a curved shape as discussed previously. In addition, Schreiber discloses the use of his glass panels with large mirrors, which are generally flat and planar in shape. None of the proposed uses of Schreiber's disclosure consist of a shaped or curved mirror. Thus, Applicants respectfully submit the Examiner has not presented a *prima facie* case of obviousness and request that the Examiner reconsider and withdraw the rejections of Claims 3-9 under 35 U.S.C. § 103(a). With regard to Claim 2, as this claim has been cancelled, the rejection to this claim has been rendered moot.

Claims 11-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Schreiber in view of Shimodaira and/or Stang (U.S. Pat. No. 4,124,277; hereinafter "Stang"). This rejection is respectfully traversed.

Applicants respectfully refer the Examiner to the remarks above regarding the Schreiber and Shimodaira references as discussed with regard to Claims 1 and 11. With regard to Stang, Stang appears to disclose a method for forming a mirror facet and employs two mold members 32, 34 to form a facet assembly that consists of a mirror 12, a first sheet of glass cloth 16 impregnated with epoxy resin, a core 18 formed of paper honey comb and a second sheet of epoxy impregnated glass cloth also designated by reference number 16. The mold members 32, 34 are employed to deform the facet assembly and maintain the facet assembly in the deformed condition

until the epoxy resin has cured. Thus, the epoxy resin of the Stang reference hardens to thereby resist the natural tendency of the mirror 12 to return to its undeflected state, and does not teach or suggest whatsoever the resin applying a compressive force to the rear surface of the mirror. Further, Stang does not teach the attachment of a support member or structure for supporting or facilitating the mounting of the mirror. In contrast, independent Claim 11 has been amended to recite:

applying a resin to the rear surface of the mirror;
curing the resin said resin shrinking as it cures and
applying a compressive force to the rear surface;
providing a reinforcing structure; and
securing the reinforcing structure to the rear surface
of the mirror, the reinforcing structure supporting the mirror.

Claim 19 recites:

forming the glass member such that the light
reflecting surface conforms to a predetermined shape;

* * *

curing the resin such that the resin, the reinforcing
member and the support structure cooperate to form a rigid
interlayer that supports the glass member and facilitates
mounting of the mirror assembly,

said resin shrinking as it cures and applying a
compressive force to the surface of the glass member
opposite the light reflecting surface, the compressive force
having a magnitude such that the entire cross-sectional
thickness of the glass member is maintained in a state of
compression.

In view of the above discussion, Applicants respectfully submit that none of Schreiber, Shimodaira and Stang, either alone or in combination teach or suggest Applicants' independent Claims 11 and 19. Specifically, none of the cited references teach or disclose securing a reinforcing structure to the rear surface of the mirror, where the

reinforcing structure supports the mirror or curing the resin, the reinforcing member and the support structure to form a rigid interlayer, where the rigid interlayer supports the glass member and facilitates mounting of the mirror assembly. In addition, there is no teaching in either Schreiber or Shimodaira to suggest the desirability of making such a modification. Further, Shimodaira teaches the application of the reflective surface after the forming of the glass member to prevent cavities and recesses formed during the curing of the resin from affecting the reflective surface. Therefore, Shimodaira also teaches away from forming the reflective surface until after forming the glass member. Accordingly, as none of the cited references teach or suggest each and every element of Applicants' independent Claims 11 and 19, Applicants respectfully submit the Examiner has not created a *prima facie* case of obviousness and request that the Examiner reconsider and withdraw the rejections of Claims 11 and 19 under 35 U.S.C. § 103(a).

With regard to Claims 12-15, 17 and 18, Applicants note these claims depend directly or indirectly from independent Claim 11 and should in condition for allowance for the reasons discussed above with regard to Claim 11. In addition, with regard to Claims 13 and 14, Applicants note that Schreiber teaches away from forming a curved shape as the method of forming employed by Schreiber requires the use of C-clamps, and Applicants respectfully assert there is no suggestion in Schreiber to modify this forming method to produce a curved shape, as discussed previously with regard to Claim 6. With regard to Claim 16, as this claim has been cancelled, the rejection to his claim has been rendered moot. Thus, Applicants respectfully request the Examiner reconsider and withdraw the rejections of Claims 12-15, 17 and 18 under 35 U.S.C. § 103(a).

Claims 7 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shimodaira as applied to Claims 1-2, 6, 8, 10-14 and 16-17. This rejection is respectfully traversed.

Applicants note Claims 7 and 9 depend directly or indirectly from independent Claim 1 and should in condition for allowance for the reasons discussed above with regard to Claim 1. With regard to Claim 7, Applicants respectfully submit one of skill in the art would not be motivated to modify Shimodaira to include vacuum forming, as noted to be a conventional forming technique by the Office. In particular, Shimodaira teaches away from using conventional forming techniques as conventional forming techniques according to Shimodaira can produce a cavity or recess in the reflective surface. Accordingly, one of ordinary skill in the art would not attempt to apply various other forming techniques to the disclosure of Shimodaira as Shimodaira expressly teaches that other, conventional, forming techniques result in undesirable characteristics. Therefore, Applicants respectfully request the Examiner reconsider and withdraw the rejections of Claims 7 and 9 under 35 U.S.C. § 103(a).

Claims 15 and 18-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shimodaira as applied to Claims 1-2, 6, 8, 10-14 and 16-17 and further in view of Stang. This rejection is respectfully traversed.

Applicants respectfully refer the Examiner to the remarks above regarding Shimodaira and Stang as discussed with regard to Claims 1, 11 and 19. Specifically, Applicants note that neither Shimodaira nor Stang, either alone or in combination, teach

or suggest each and every limitation of Applicants' Claim 19. In this regard, the cited references fail to teach or suggest curing the resin, reinforcing member and the support structure to form a rigid interlayer that supports the glass member and facilitates mounting of the mirror assembly, as discussed previously. In addition, Claim 19 recites the forming of the glass member with the light reflecting surface already coupled to the glass member, in direct contrast to the teachings of Shimodaira, as discussed previously. Applicant notes that as Shimodaira teaches away from the forming of the glass member with the light reflecting surface intact, as it is an object of Shimodaira to apply the light reflecting surface after the forming of the glass member to prevent recesses or cavities formed by the curing process from being produced on the surface of the glass member. Thus, one of ordinary skill in the art would not be motivated, based on the Shimodaira reference, to form the glass member with the light reflecting surface coupled to the glass member such that the light reflecting surface has a predetermined shape, as claimed in Claim 19.

Therefore, Applicants respectfully request the Examiner reconsider and withdraw the rejections of Claim 19 under 35 U.S.C. § 103(a). In addition, as Claims 15 and 18 depend directly from independent Claim 11, Applicants submit these claims are also believed to be patentable and in condition for allowance for the reasons set forth for Claim 11 above. Accordingly, Applicants respectfully request the Examiner reconsider and withdraw the rejections of Claims 15 and 18 under 35 U.S.C. § 103(a).

Claim 19 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Shimodaira and Stang and further in view of Becht (U.S. Patent No. 3,607,584; hereinafter "Becht"). This rejection is respectfully traversed.

Applicants respectfully refer the Examiner to the remarks above regarding Shimodaira and Stang as applied to Claim 19. As discussed previously, neither Shimodaira nor Stang teach or suggest each and every element of Applicant's Claim 19, in that none of the cited references teach or suggest rigid interlayer for supporting and facilitating attachment of the mirror assembly or forming a light reflective surface prior to the curing of the resin. In addition, Applicants respectfully assert that one of ordinary skill in the art would not be motivated in light of Becht to modify Shimodaira to include applying the reflective material prior to the forming of the reflector of Shimodaira, as suggested by the Office. In particular, Shimodaira teaches away from the forming of the reflective surface prior to the curing of the resin stating that the curing of the resin can create cavities and recesses that are produced on the reflective surface of the glass plate, making the reflective surface inaccurate. It is established that where references, instead of suggesting the invention, seek or warn to avoid the suggestion, such references diverge from and teach away from the invention at hand and it is error to find obviousness based on such references. In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1599 (Fed. Cir. 1988)(citing W.L. Gore & Assocs. v. Garlock, Inc., 721 F.2d 1540, 1550, 220 USPQ2d 303, 311 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984)).

Accordingly, as Shimodaira teaches away from this modification, and further as none of the cited references teach or suggest each and every element as claimed in

Applicant's Claim 19, Applicants respectfully submit the Office has not established a *prima facie* case of obviousness with regard to Claim 19. Thus, Applicants respectfully request the Examiner reconsider and withdraw the rejections of Claim 19 under 35 U.S.C. § 103(a).

Claims 1-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Stang in view of Shimodaira. This rejection is respectfully traversed.

Applicants respectfully refer the Examiner to the remarks above regarding Claims 1, 11 and 19 for a discussion of the Stang and Shimodaira references as they apply to the pending claims. As discussed above, none of these references teach or suggest a support member or rigid interlayer for supporting the glass member. Further, neither Stang nor Shimodaira teach or suggest curing the resin to apply a compressive force to the rear surface of the mirror as also discussed above.


Accordingly, as Stang and Shimodaira, either alone or in combination, fail to teach or suggest each and every element of Applicant's independent Claims 1, 11 and 19, Applicants respectfully submit the Office has failed to present a case of *prima facie* obviousness with regard to these claims. In addition, as Claims 3-10 and 12-15, 17 and 18 depend directly or indirectly from independent Claims 1 or 11, Applicants respectfully submit these claims are also in condition for allowance for the reasons set forth for Claims 1 and 11, above. With regard to Claims 2 and 16, as these claims have been cancelled, the rejection to these claims has been rendered moot. Thus, Applicants respectfully request the Examiner reconsider and withdraw the rejections of Claims 1, 3-15 and 17-19 under 35 U.S.C. § 103(a).

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: 8/8/06

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